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ABSTRACT

This review provides an analysis of the key determinants of school effectiveness in elementary and secondary schools. A literature review identified the following key correlates of effectiveness: (1) professional leadership; (2) shared vision and goals; (3) a learning environment; (4) concentration on teaching and learning; (5) purposeful teaching; (6) high expectations; (7) positive reinforcement; (8) monitoring progress; (9) pupil rights and responsibilities; (10) home-school partnership; and (11) a learning organization. The majority of effectiveness studies have focused exclusively on students' cognitive outcomes, but there is less evidence about school and classroom processes that are important in determining schools' success in promoting social or affective outcomes. Because of this focus, the review tells more about the correlates of academic effectiveness. Results of the review did not support the view that any one particular teaching style is more effective than others, but did indicate that flexibility and the ability to adapt teaching approaches are more important than notions of any single style. (Contains 186 references.) (SLD)

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KEY CHARACTERISTICS OF EFFECTIVE SCHOOLS

A review of school effectiveness research

by

Pam Sammons
Josh Hillman
Peter Mortimore

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A review of school effectiveness research

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INTRODUCTION

In 1994 the Office for Standards in Education (OFSTED) commissioned the International School Effectiveness and Improvement Centre (ISEIC) to conduct a review of school effectiveness research summarising current knowledge about the factors identified in the literature as important in gaining a better understanding of effectiveness. The aim was to provide "*an analysis of the key determinants of school effectiveness in secondary and primary schools*".

Scheerens (1992) has identified five areas of research relevant to school effectiveness:

1 Research into equality of opportunity and the significance of the school in this (eg Coleman *et al*, 1966; Jencks *et al*, 1972).

2 Economic studies of education production functions (eg Hanushek, 1979; 1986).

3 The evaluation of compensatory programmes (eg Stebbins, 1977; and also reviews by Purkey & Smith, 1983 and Van der Grift, 1987).

4 Studies of effective schools and the evaluation of school improvement programmes (eg for studies of effective schools see: Brookover *et al*, 1979; Rutter *et al*, 1979; Mortimore *et al*, 1988a. For the evaluation of improvement programmes see the review by Miles *et al*, 1983).

5 Studies of the effectiveness of teachers and teaching methods (see reviews by Walberg, 1984; Stallings, 1985; Doyle, 1985; Brophy & Good, 1986).

Although our primary focus is on the school effectiveness tradition, in conducting our review we have examined research in the related field of teacher effectiveness. Where appropriate, however, we also refer to work in the other three areas identified by Scheerens. It is important to take account of the relationships between school factors (such as policies, leadership and culture) and classroom processes, because in some institutions the former may provide a more supportive environment for teaching and learning than others (Purkey & Smith, 1983; Mortimore *et al*, 1988a; Fullan & Hargreaves, 1992; Scheerens, 1992; Reynolds *et al*, 1994; Stoll & Fink, 1994). Where appropriate we refer to the results of previous reviews of literature in these fields (eg Purkey & Smith, 1983; Ralph & Fennessey, 1983; Rutter, 1983; Doyle, 1986; Walberg, 1986; Fraser *et al*, 1987; Rosenshine, 1987; Reid, Holly & Hopkins, 1987; Government Audit Office, 1989; Levine & Lezotte, 1990; North West Regional Educational Laboratory, 1990; Reynolds & Cuttance, 1992; Scheerens, 1992; Reynolds *et al*, 1994; Tabberer, 1994). We draw attention to some of the limitations of existing school effectiveness research, particularly the weak theoretical basis (Scheerens, 1992; Reynolds & Cuttance, 1992; Creemers, 1994; Hopkins, 1994), and the fact that the number of empirical studies which focus directly on the characteristics of effective schools is exceeded by the number of reviews of the area.

We note the need for caution in interpreting findings concerning "*key determinants*" of effectiveness based on evidence much of which, in the early research, is derived from studies of the characteristics of small numbers of outlier schools (selected as either highly effective or highly ineffective). The dangers of interpreting correlations as evidence of causal mechanisms are also highlighted. For example, reciprocal relationships may well be important, as may intermediate causal relationships. Thus, high expectations may enhance student achievement, which in turn promotes high expectations for succeeding age groups. Improved achievement may benefit behavioural outcomes which in turn foster later achievement. Conversely, lower

expectations may become self-fulfilling, poor attendance and poor behaviour may lead to later academic under-achievement which exacerbates behavioural and attendance problems and so on. Despite these caveats, however, we conclude that such a review has value in synthesising current school effectiveness findings in an accessible format and providing an analysis of key factors likely to be of relevance to practitioners and policy-makers concerned with school improvement and enhancing quality in education.

BACKGROUND

The major impetus for development of North American and British school effectiveness research is generally recognised to have been a reaction to the deterministic interpretation of findings by the US researchers Coleman *et al* (1966) and Jencks *et al* (1972) and, in particular, their pessimistic view of the potential influence of schools, teachers and education on students' achievement (Rutter *et al*, 1979; Mortimore *et al*, 1988a; Mortimore, 1993; Reynolds & Creemers, 1990; Firestone, 1991). These studies indicated that, although background factors are important, schools can have a significant impact. More recently Creemers, Reynolds & Swint (1994) have also pointed to the existence of different interpretations reflecting the intellectual ancestries of the school effectiveness research traditions in other national contexts. For example, in the Netherlands interest in school effectiveness grew out of research traditions concerning matters such as teaching, instruction, curriculum and school organisation, while in Australia the strong field of educational administration provided a stimulus.

The last 15 years has witnessed a rapid growth in the two related (albeit at times tenuously) areas of research and practice covering the fields of school effectiveness and improvement. In 1990, in a mission statement launching the first issue of a new journal devoted to these topics, Reynolds & Creemers (1990) argued that interest in the topics of school effectiveness and improvement had been "*fuelled by the central place that educational quality (and sometimes equity) issues have assumed in the policy concerns of most developed and many developing societies*" (p 1).

This review focuses primarily upon the results of school effectiveness research, but it is recognised that many school effectiveness researchers are profoundly concerned about the implications of their work for policy-makers, schools and their students. An interest in raising standards in the widest sense, improving the quality of education and opportunities available to students in all schools, and the implications of research results for practitioners is evident. It is, however, important to recognise that school effectiveness research results do not provide a blueprint or recipe for the creation of more effective schools (Reid, Hopkins & Holly, 1987; Sammons, 1987; Mortimore *et al*, 1988a; Creemers, 1994; Sammons, 1994). School improvement efforts require a particular focus on the processes of change and understanding of the history and context of specific institutions (see Louis & Miles, 1991; Fullan, 1991; Ainscow & West, 1994; Stoll & Fink, 1994). Whilst it is recognised that, "*in many ways our knowledge of what makes a 'good' school greatly exceeds our knowledge of how to apply that knowledge in programmes of school improvement to make schools 'good'*" (Reynolds & Creemers, 1990, p2), there is growing acceptance that such research provides a valuable background and useful insights for those concerned with improvement (Reid, Hopkins & Holly, 1987; Mortimore, 1991a & b; Sammons, 1987; 1994; Stoll & Fink, 1994). The findings should not, however, be applied mechanically and without reference to a school's particular context. Rather, they can be seen as a helpful starting point for school self-evaluation and review.

Aims and goals of effectiveness research

In reviewing early school effectiveness studies in the US context, Firestone (1991) highlighted the wide ranging impact of studies by Edmonds (1979) and Goodlad *et al* (1979). He noted that the effective schools movement was committed to the belief that children of the urban poor could succeed in school and that the school could help them succeed. Firestone (1991) recognised that "*Effectiveness is not a neutral term. Defining the effectiveness of a particular school always requires choices among competing values*" and that "*criteria of effectiveness will be the subject of political debate*" (p2). Early school effectiveness research incorporated explicit aims or goals concerned with equity and excellence. Three important features were:

- clientele (poor/ethnic minority children)
- subject matter (basic skills in reading and maths)
- equity (children of the urban poor should achieve at the same level as those of the middle class).

This early research therefore, had a limited and specific focus. As Ralph & Fennessey (1983) note, such research was often dominated by the perspectives of school improvers and providers of external support to schools. More recent research, especially in the UK context, has moved away from an explicit equity definition towards a focus on the achievements of all students and a concern with the concept of progress over time rather than cross-sectional 'snapshots' of achievement at a given point in time. This broadens the clientele to include all students, not just the disadvantaged, and a wider range of outcomes (academic and social). As in the US, however, the majority of UK studies have also been conducted in inner city schools. More recent research also recognises the crucial importance of school intake, and attempts to control, usually statistically, for intake differences between schools before any comparisons of effectiveness are made (Mortimore, 1991b; Mortimore, Sammons & Thomas, 1995).

Definitions of effectiveness

Although Reid, Hopkins & Holly (1987) concluded that "*while all reviews assume that effective schools can be differentiated from ineffective ones there is no consensus yet on just what constitutes an effective school*" (p22), there is now a much greater degree of agreement amongst school researchers concerning appropriate methodology for such studies, about the need to focus explicitly on student outcomes and, in particular, on the concept of the 'value added' by the school (McPherson, 1992). For example, Mortimore (1991a) has defined an effective school as one in which students progress further than might be expected from consideration of its intake. An effective school thus adds extra value to its students' outcomes in comparison with other schools serving similar intakes. By contrast, in an ineffective school students make less progress than expected given their characteristics at intake. Methodological developments have drawn attention to the need to consider issues of consistency and stability in effectiveness and the importance of caution in interpreting any estimates of individual school's effects. In particular, the need to take account of the confidence limits associated with such estimates is highlighted (Goldstein *et al*, 1993; Creemers, 1994; Sammons *et al*, 1994b; Mortimore, Sammons & Thomas, 1995).

Definitions of school effectiveness are thus dependent upon a variety of factors as Sammons (1994) has argued. These include:

- sample of schools examined (many studies have focused on inner city schools and this context may affect the general applicability of results);

- choice of outcome measures (studies which focus on only one or two outcomes may give only a partial picture of effectiveness, both in terms of effects and the correlates of effectiveness) a broad range reflecting the aims of schooling being desirable (for example the Mortimore *et al*, 1988a study examined several cognitive measures and a range of social/affective outcomes);

- adequate control for differences between schools in intakes to ensure that 'like is compared with like' (ideally, information about individual pupils, including baseline measures of prior attainment, personal, socio-economic and family characteristics are required, see Gray, Jesson & Sime, 1990; Willms, 1992; Goldstein *et al*, 1993; Thomas & Mortimore, 1994; Sammons *et al*, 1994b);

- methodology (value added approaches focusing on progress over time and adopting appropriate statistical techniques such as multilevel modelling to obtain efficient estimates of schools' effects and their attached confidence limits are needed, see Goldstein, 1987; Willms & Raudenbush, 1989; Gray *et al*, 1993; Goldstein *et al*, 1993); and

- timescale (longitudinal approaches following one or more age cohorts over a period of time rather than cross sectional "snapshots" are necessary for the study of schools' effects on their students) to allow issues of stability and consistency in schools' effects from year to year to be addressed (see Gray *et al*, 1993; Sammons, Mortimore & Thomas, 1993a).

Evidence of effectiveness

The central focus of school effectiveness research concerns the idea that "*schools matter, that schools do have major effects upon children's development and that, to put it simply, schools do make a difference*" (Reynolds & Creemers, 1990, p1). Although Preece (1989) looked at research pitfalls of school effectiveness studies and made a number of criticisms of selected studies. Tabberer (1994) concludes that "*Despite [Preece's critique] there is little argument now that schools can and do have an effect*".

During the last two decades a considerable body of research evidence has accumulated which shows that, although the ability and family backgrounds of students are major determinants of achievement levels, schools in similar social circumstances can achieve very different levels of educational progress (eg Reynolds, 1976, 1982; Gray, 1981; Edmonds, 1979; Brookover *et al*, 1979; Madaus *et al*, 1979b; Rutter *et al*, 1979; Mortimore *et al*, 1988b; Tizard *et al*, 1988; Smith & Tomlinson, 1989; Willms & Raudenbush, 1989; Nuttall *et al*, 1989; Gray, Jesson & Sime, 1990; Daly, 1991; FitzGibbon, 1991; Jesson & Gray, 1991; Stringfield *et al*, 1992; Goldstein *et al*, 1993; Sammons *et al*, 1994a, 1994b, 1994c; Thomas & Mortimore, 1994; Thomas, Sammons & Mortimore, 1994). Such studies, conducted in a variety of different contexts, on different age groups, and in different countries confirm the existence of both statistically and educationally significant differences between schools in students' achievements.

Most school effectiveness studies have focused on academic achievement in terms of basic skills in reading and mathematics, or examination results (Goodlad, 1984). However, a few have also provided evidence of important differences in social/affective outcomes such as attendance, attitudes, and behaviour (Reynolds, 1976; Rutter *et al*, 1979; Mortimore *et al*, 1988a).

There is some indication from recent British research (Sammons *et al*, 1994a; Goldstein & Sammons, 1995) following up the *School Matters* cohort that primary school effects may be larger than those identified in the secondary sector, and that primary schools can have a significant long term impact on later attainment at GCSE (in other words evidence of a continuing primary school effect). In this connection, Teddlie & Virgilio's (1988) research in the USA, which indicates that the variance in teacher behaviour at the elementary grade levels is greater than that at the secondary level, may be relevant.

Measuring effectiveness

Methodological advances, particularly the development of multilevel techniques (eg Goldstein, 1987) have led to improvements in the estimation of school effects (Scheerens, 1992; Creemers, 1994). These have enabled researchers to take better account of differences between schools in the characteristics of their pupil intakes and facilitated exploration of issues such as consistency and stability in schools' effects upon different kinds of outcome and over time (see reviews by Gray *et al*, 1993; Sammons, Mortimore & Thomas, 1993a; Reynolds *et al*, 1994; Thomas & Mortimore, 1994; Mortimore, Sammons & Thomas, 1995). The need to examine subject differences, whether at A-level (FitzGibbon, 1991, 1992, Tymms, 1992) or at GCSE (Sammons *et al*, 1994c), as well as overall levels of attainment in terms of total A-level or GCSE points scores, is becoming an important focus of recent studies. These highlight the importance of multilevel analyses which examine departmental as well as school effects (see also Dutch work by Luyten, 1994 and Witziers, 1994).

In addition, multilevel techniques also allow investigation of the concept of differential effectiveness, whether some schools are more or less effective for particular student groups (boys or girls, low or high ability students, those from specific ethnic groups).

Issues such as stability and consistency in effects over time and across multiple outcomes, departmental differences and differential effectiveness for particular student groups clearly have important implications for interpreting the effectiveness of individual schools (Nuttall *et al*, 1989; Sammons *et al*, 1993b). Thus Tabberer (1994) discussing the possibilities of differential effectiveness notes that "*It is important for, if it exists to a notable extent, then single feature measures of school effectiveness such as are considered for league tables are brought further into question.*"

The importance of taking note of the confidence limits attached to estimates (residuals) which give a measure of the relative value added to or subtracted from their students' achievements by individual schools, also has implications for the use of league tables. It is not appropriate to produce detailed rankings of value added estimates because the confidence limits overlap (Goldstein *et al*, 1993; Sammons *et al* 1993b, 1994b, 1994c; Thomas & Mortimore, 1994). Rather, the methodology allows the identification of schools where results are significantly different from those predicted on the basis of intake over one or more years.

Size and importance of school effects

The increasing sophistication of school effectiveness research has provided strong evidence that individual student background characteristics account for a much larger proportion of the total variance in students' academic outcomes than does the particular school attended (Coleman *et al*, 1966; Jencks *et al*, 1972). This is especially true of the impact of prior attainment. However, gender, socio-economic, ethnicity and language characteristics (which, of course are also strongly correlated with prior attainment [see Sammons *et al*, 1993]) also have a small but continuing influence. Creemers (1994) states that "*About 12 to 18% of the variance in student outcomes can*

be explained by school and classroom factors when we take account the background of the students" (p13). Other authors have produced slightly more modest estimates (between 8% and 10%, Daly, 1991). Expressed as percentages, school and classroom effects do not appear exceptionally large, but in terms of differences between schools in students' outcomes they can be highly significant both educationally and statistically. For example, Thomas & Mortimore (1994) report differences between schools' value added scores of between seven Grade E results and 7 Grade C results (over 14 points) at GCSE.

Whilst there are strong arguments against producing detailed rankings or league tables of schools results even using value added techniques (Goldstein *et al*, 1993), the size of the differences between schools identified as statistically significantly more or less effective is not trivial and can be striking (Mortimore *et al*, 1988b; Gray, Jesson & Sime, 1990; Sammons *et al*, 1993b; 1994b). Furthermore, Mortimore *et al*, (1988a & b) have shown that in terms of pupil progress (the value added) school effects are much more important than background factors such as age, gender, and social class (being roughly four times more important for reading progress, and ten times for mathematics progress). In terms of equity differences, this study also showed that, although no school removed social class differences in attainment, the absolute achievement in basic skills of working class pupils in the most effective schools was higher than those of middle class pupils in the least effective schools after three years of junior education. Again, such findings point to the educational significance of differences between schools in their effectiveness in adding value to student outcomes, and highlight the importance of using longitudinal rather than cross-sectional approaches.

There is also some evidence from American, British and Dutch studies that schools' effects may vary for different kinds of outcomes, being larger for subjects such as maths or science primarily taught at school, than for reading or English which are more susceptible to home influences (Scheerens, 1992). Fuller & Clarke's (1994) recent review of school effects in developing countries reaches similar conclusions.

Unfortunately, less attention has been paid to social than to the academic affective outcomes of education. Further research on these is needed focusing on questions of consistency, stability and differential effectiveness (Sammons, Mortimore & Thomas, 1993).

Context and transferability

There is increasing recognition that, although much can be learned from international and comparative studies of school and teacher effectiveness conducted in different countries, the results of such studies are unlikely to be directly transferable to other contexts (see the discussion by Wimpleberg *et al*, 1989). For example, early results from the on-going International School Effectiveness Research Programme (ISERP) investigating primary mathematics achievement, provide indications of differences between five countries in the impact of pupil background factors and the effects of certain aspects of teacher behaviour (Creemers, Reynolds & Swint, 1994). Although, the sample size is severely limited, this research also suggests that the proportion of variance in achievement attributable to schools and classes may vary in different countries.

Creemers (1994) reports findings which point to the contingent nature of school effectiveness research, and the importance of distinctions such as primary/ secondary, and high versus low socio-economic status (SES) of student intakes. Riddell, Brown & Duffield (1994) likewise draw attention to factors such as policy context (national and local) and SES context in case studies of Scottish secondary schools. Reynolds's (1994) international review of school effectiveness research has also highlighted differences in traditions and findings, and the importance of

awareness of the contextual dimension of national educational context, which is often subject to rapid change. Fuller & Clarke (1994) likewise draw attention to the importance of context in attempts to analyse school effects in developing countries.

Given the likely importance of contextual factors, particularly national context, the present review has given a particular emphasis to the results of British school effectiveness research because this is likely to be of greatest relevance to schools in the UK. Other research has also been examined and summarised and, where appropriate, attention is drawn to any differences in the emphasis given to specific findings.

It now widely recognised that there is no simple combination of factors which can produce an effective school (Willms, 1992; Reynolds & Cuttance, 1992). Indeed, there is very little research "*especially in Britain, which is explicit about 'turning round' so-called 'ineffective' schools*" as Gray & Wilcox (1994) note. These authors go on to argue that "*in the search for the correlates of effectiveness, the correlates of ineffectiveness have been assumed to be the same. It is by no means clear, however, that they are. How an 'ineffective' school improves may well differ from the ways in which more effective schools maintain their effectiveness*" (p2). Sammons *et al,* (1994c) have drawn attention to the need for further case studies of ineffective as well as of more effective schools to enhance our understanding of the processes of effectiveness. Recipes for success and 'quick fixes' are not supported by the research base. In contrast to the ambitiously entitled United States department review it is not intended to present deterministic conclusions about *"What Works"* in education. In many ways every school is unique "*each has its own characteristics which are shaped by such factors as its location, pupil intake, size, resources and, most importantly, the quality of its staff*" (Reid, Hopkins & Holly, 1987). To this list we can add its particular history, as well as Governing Body, LEA and national influences. As Chubb (1988) argues, school performance is unlikely to be significantly improved by any set of measures that *"fails to recognise that schools are institutions, complex organisations composed of interdependent parts, governed by well established rules and norms of behaviour, and adapted for stability*"

Nonetheless, given these reservations, a number of reviewers, ourselves included, have identified certain common features concerning the processes and characteristics of more effective schools (eg Purkey & Smith, 1983; Reid, Holly & Hopkins, 1987; United States Department of Education, 1987; Gray, 1990; NREL, 1990; Firestone, 1991; Mortimore, 1991a & b, 1993). As Firestone (1991) observed, *"There is a core of consistency to be found across a variety of studies conducted here and abroad with a wide range of different methodological strengths and weaknesses. Moreover, there is considerable support for the key findings in related research on organizational behaviour in a variety of work settings and countries."*(p9)

KEY CHARACTERISTICS OF EFFECTIVE SCHOOLS

In this section we provide a description of some of the key factors (or correlates) of effectiveness identified by our review. These factors should not be regarded as independent of each other, and we draw attention to various links between them which may help to provide a better understanding of possible mechanisms of effectiveness. Whilst our list is not intended to be exhaustive, it provides a summary of relevant research evidence which we hope will provide a useful background for those concerned with promoting school effectiveness and improvement, and the processes of school self-evaluation and review.

ELEVEN FACTORS FOR EFFECTIVE SCHOOLS	
1 Professional leadership	Firm and purposeful A participative approach The leading professional
2 Shared vision and goals	Unity of purpose Consistency of practice Collegiality and collaboration
3 A learning environment	An orderly atmosphere An attractive working environment
4 Concentration on teaching and learning	Maximisation of learning time Academic emphasis Focus on achievement
5 Purposeful teaching	Efficient organisation Clarity of purpose Structured lessons Adaptive practice
6 High expectations	High expectations all round Communicating expectations Providing intellectual challenge
7 Positive reinforcement	Clear and fair discipline Feedback
8 Monitoring progress	Monitoring pupil performance Evaluating school performance
9 Pupil rights and responsibilities	Raising pupil self-esteem Positions of responsibility Control of work
10 Home-school partnership	Parental involvement in their children's learning
11 A learning organisation	School-based staff development

1 Professional leadership

Almost every single study of school effectiveness has shown both primary and secondary leadership to be a key factor. Gray (1990) has argued that "*the importance of the headteacher's leadership is one of the clearest of the messages from school effectiveness research*". He draws attention to the fact that no evidence of effective schools with weak leadership has emerged in reviews of effectiveness research. Reviews by Purkey & Smith (1983) and the United States

Department of Education (1987) conclude that leadership is necessary to initiate and maintain school improvement.

However, the importance of the headteacher's leadership role (rather than that of other staff members such as heads of department) may be sensitive to context, particularly patterns of school organization (see Hallinger & Leithwood, 1994). Thus the headteacher's leadership is a marked feature of British (eg Rutter *et al*, 1979; Mortimore *et al*, 1988a; Caul, 1994; Sammons *et al*, 1994c) and American research (eg Edmonds, 1979; Brookover *et al*, 1979; Stringfield & Teddlie, 1987) but specific aspects (assertive principal leadership and quality monitoring) have not been found important in the Netherlands (Scheerens, 1992). Hallinger & Leithwood (1994) have argued for further comparative research in this domain.

Leadership is not simply about the quality of individual leaders although this is, of course, important. It is also about the role that leaders play, their style of management, their relationship to the vision, values and goals of the school, and their approach to change.

Looking at the research literature as a whole, it would appear that different styles of leadership can be associated with effective schools, and a very wide range of aspects of the role of leaders in schools have been highlighted. As Bossert *et al*, 1982 concluded "*no simple style of management seems appropriate for all schools ... principals must find the style and structures most suited to their own local situation*" (p38). However, a study of the literature reveals that three characteristics have frequently been found to be associated with successful leadership: strength of purpose, involving other staff in decision-making, and professional authority in the processes of teaching and learning.

a] Firm and purposeful

Effective leadership is usually firm and purposeful. Although case studies have shown isolated examples of schools where the central leadership role is played by another individual, most have shown the headteacher (or principal in American studies) to be the key agent bringing about change in many of the factors affecting school effectiveness (Gray, 1990; United States Department of Education, 1987).

The research literature shows that outstanding leaders tend to be proactive. For example, effectiveness is enhanced by "*vigorous selection and replacement of teachers*" (Levine & Lezotte, 1990), although research in Louisiana (Stringfield & Teddlie, 1987) emphasised that this mainly takes place in the early years of a principal's term or of an improvement drive. Once a staff has been constituted that is capable of working together towards effectiveness, staff stability tends to be resumed in effective secondary schools. Interim results reported by Sammons *et al* (1994c) also suggest that in effective schools, heads place a great emphasis on recruitment and also point to the importance of consensus and unity of purpose in the school's senior management team.

Another aspect of firm leadership is brokerage, the ability to mediate or 'buffer' the school from unhelpful change agents, to challenge and even violate externally-set guidelines (Levine & Lezotte, 1990; Hopkins, Ainscow & West, 1994). The increasing autonomy of schools in recent years has reduced the need for this type of activity, but it has increased the scope for another factor in effective leadership which some studies have shown to be important, namely successful efforts to obtain additional resources, for example through grants, or contributions from local business and the community (Venezky & Winfield, 1979: NREL, 1990; Murphy, 1989; Levine & Lezotte, 1990).

A number of studies have pointed to the key role of leadership in initiating and maintaining the school improvement process (Trisman *et al*, 1976; Berman & McLaughlin, 1977; Brookover &

Lezotte, 1979; Venezky & Winfield, 1979; Lightfoot, 1983; Louis & Miles, 1992; Stoll & Fink, 1994; Sammons *et al*, 1994c). Improving many of the school effectiveness factors or making fundamental changes may require support from outside agencies, such as local education authorities, universities or consultants (Purkey & Smith, 1983; Weindling, 1989), and successful leaders will establish and sustain regular contact with these networks (Louis & Miles, 1990). However, the message from school improvement programmes, synthesised most exhaustively by Fullan (1991), is that effective change comes from within a school.

Whilst some case studies have pointed to the long hours worked by effective principals (Venezky & Winfield, 1979; Levine & Stark, 1981), the impact of this factor is difficult to determine: it is *only* effective when accompanied by other factors. It can fluctuate widely over short periods of time; and it is almost impossible to separate its direct impact on improvement from its role as a means of building a shared vision and as a signal of ethos to other staff.

b] A participative approach

A second feature of effective headteachers is the sharing of leadership responsibilities with other members of the senior management team and the involvement more generally of teachers in decision-making. Mortimore *et al* (1988a), in their study of primary schools mentioned, in particular, the involvement of the deputy head in policy decisions, the involvement of teachers in management and curriculum planning, and consultation with teachers about spending and other policy decisions, as all being correlates of school effectiveness. This is tied to another important characteristic of a school: the extent to which its culture is a collaborative one (see shared vision and goals).

In larger primary schools and secondary schools, there may be an even greater need for delegation of some of the responsibilities of leadership. Smith & Tomlinson (1989) in their study of secondary schools stressed the importance of leadership and management by heads of departments, a finding which has been borne out by recent research showing substantial differentials in departmental effectiveness within schools (Sammons *et al*, 1994). In case studies of schools in Northern Ireland, Caul (1994) drew attention both to the need for clear leadership and delegated authority. His study noted the importance of good middle managers in the school at head of department level. Research in the Netherlands has also pointed to the importance of the departmental level in secondary schools (Luyten, 1994; Witziers, 1994).

Summing up these first two features, effective leadership requires clarity, avoidance of both autocratic and over-democratic ways of working, careful judgement of when to make an autonomous decision and when to involve others, and recognition of the efficacy of the leadership role at different levels of the school. Such leadership is also important for the development and maintenance of a common school mission and a climate of shared goals (see the discussion under factor 2 Shared vision and goals below).

c] The leading professional

An effective headteacher is in most cases not simply the most senior administrator or manager, but is in some sense a leading professional. This implies involvement in and knowledge about what goes on in the classroom, including the curriculum, teaching strategies and the monitoring of pupil progress (Rutter *et al*, 1979; Mortimore *et al*, 1988a). In practice this requires the provision of a variety of forms of support to teachers, including both encouragement and practical assistance (Levine & Stark, 1981; Murphy, 1989). It also involves the head projecting a 'high' profile through actions such as frequent movement through the school, visits to the classroom and informal conversation with staff (Sizemore *et al*, 1983; Mortimore *et al*, 1988a; Pollack *et al*, 1987; Teddlie *et al*, 1989). It also requires assessing the ways teachers function, described by

Scheerens (1992) as "*one of the pillars of educational leadership*". Of course, this type of approach in itself can have little bearing on effectiveness. It is when it is in conjunction with other factors mentioned, such as emphasis on teaching and learning and regular monitoring throughout the school, that it can have such a powerful impact. Indeed every one of the eleven key factors that we have identified have implications for effective leaders. This is borne out in Murphy's (1989) distillation of the literature on instructional leadership. The impact headteachers have on student achievement levels and progress is likely to operate indirectly rather than directly by influencing school and staff culture, attitudes and behaviour which, in turn, affect classroom practices and the quality of teaching and learning.

2 Shared vision and goals

Research has shown that schools are more effective when staff build consensus on the aims and values of the school, and where they put this into practice through consistent and collaborative ways of working and of decision-making. For example, Lee, Bryk & Smith's (1993) review of literature concerning the organization of effective secondary schools points to the importance of a sense of community "*Such elements of community as cooperative work, effective communication, and shared goals have been identified as crucial for all types of successful organizations, not only schools.*" (p227). Others have reached similar conclusions concerning primary schools (eg Cohen, 1983; Mortimore *et al*, 1988a). Whilst the extent to which this is possible is partly in the hands of the headteacher (see leadership), it also relates to broader features of schools which are not necessarily determined by particular individuals.

a] Unity of purpose

Most studies of effective organisations emphasise the importance of shared vision in uplifting aspirations and fostering a common purpose. This is particularly important in schools which are challenged to work towards a number of difficult and often conflicting goals, often under enormous external pressure (Purkey & Smith 1983; Levine & Lezotte 1990). Both school effectiveness research and evaluations of school improvement programmes show that consensus on the values and goals of the school is associated with improved educational outcomes (Trisman *et al*, 1976; Rutter *et al*, 1979; Venezky & Winfield, 1979; Lightfoot, 1983; MacKenzie, 1983; Lipsitz, 1984; California Assembly, 1984; United States Department of Education, 1987; Stoll & Fink, 1994). Rutter *et al*, (1979) stressed that the atmosphere of a school "*will be greatly influenced by the degree to which it functions as a coherent whole*" and they found that a school-wide set of values was conducive to both good morale and effective teaching. Similarly, Edmonds (1979) emphasised the importance of school-wide policies and agreement amongst teachers in their aims. Unity of purpose, particularly when it is in combination with a positive attitude towards learning and towards the pupils, is a powerful mechanism for effective schooling (California, 1980). Cohen (1983) has also highlighted the need for clear, public and agreed instructional goals.

In their discussion of Catholic schools' relatively greater effectiveness in promoting students' academic and social outcomes (eg low drop out) in the US context, Lee, Bryk & Smith (1993) draw attention to the importance of strong institutional norms and shared beliefs producing an "*educational philosophy that is well aligned with social equity aims*" (p230/231). In Northern Ireland, Caul (1994) has also concluded that more effective schools share common goals including a commitment to quality in all aspects of school life and clear sets of organisational priorities.

b] Consistency of practice

Related to the notion of consensus amongst staff is the extent to which teachers follow a consistent approach to their work and adhere to common and agreed approaches to matters such as assessment, and the enforcement of rules and policies regarding rewards and sanctions. (See also the discussions concerning factor 7 Positive reinforcement and factor 8 Monitoring progress.) Of course, consistency across the school will be much more amenable in a context underpinned by unity of purpose as noted above. Work by Cohen (1983) concludes that the need for curriculum and instructional programmes to be interrelated, especially in elementary (primary) schools, implies that in more effective schools, prevailing norms which grant considerable autonomy to individual teachers carry less weight than do the shared goals of professional staff.

Mortimore *et al* (1988a) found that in schools where teachers adopt a consistent approach to the use of school curriculum guidelines there was a positive impact on the progress of pupils. Glenn (1981) had similar findings. Rutter *et al* (1979) focused in particular on consistent approaches to discipline, and demonstrated that pupils are more likely to maintain principles and guidelines of behaviour when they understand the standards of discipline to be based on "*general expectations set by the school*" rather than the whim of the individual teacher. The authors also pointed to the importance of teachers acting as positive role models for the pupil, in their relationships with pupils and other staff and in their attitude to the school. In his study of Welsh secondary schools Reynolds (1976) also drew attention to the importance of avoiding a rigid and coercive approach to discipline.

c] Collegiality and collaboration

Collegiality and collaboration are important conditions for unity of purpose (Rutter *et al,* 1979, Lightfoot, 1983, Purkey & Smith, 1983; Lipsitz, 1984; United States Department of Education, 1987). As was seen in the section on leadership, effective schools tend to have a strong input from staff into the way that the school is run. For example, Rutter *et al* (1979) found that pupil success was greater in schools with a decision-making process in which all teachers felt that their views were represented and seriously considered. In the primary sector Mortimore *et al* (1988a) also drew attention to the importance of teacher involvement in decision-making and the development of school guidelines creating a sense of 'ownership'. However, such involvement represents only one aspect of collegiality. To some extent, the contribution to achievement comes through a strong sense of community among staff and pupils, fostered through reciprocal relationships of support and respect (Rutter *et al,* 1979; Wynn, 1980; Lightfoot, 1983; Finn, 1984; Lipsitz, 1984; Wilson & Corcoran, 1988). It also comes through staff sharing ideas, observing each other and giving feedback, learning from each other, and working together to improve the teaching programme (NREL, 1990).

3 A learning environment

The ethos of a school is partly determined by the vision, the values and the goals of the staff, and the way that they work together, as discussed above. It is also determined by the climate in which the pupils work: the learning environment. The particular features of this appear to be an orderly atmosphere and an attractive working environment.

a] An orderly atmosphere

Successful schools are more likely to be calm rather than chaotic places. Many studies have stressed the importance of maintaining a task-oriented, orderly climate in schools (Weber, 1971; Stallings & Hentzel, 1978; Brookover *et al,* 1979; Edmonds, 1979, 1981; Rutter *et al,* 1979;

Coleman *et al,* 1982; Lightfoot, 1983). Mortimore *et al* (1988a) also pointed to the encouragement of self-control amongst pupils as a source of a positive ethos in the classroom, and the disadvantages of high levels of pupil noise and movement for pupil concentration. What the research in general shows is not that schools become more effective as they become more orderly, but rather that an orderly environment is a prerequisite for effective learning to take place. Creemers (1994) also reports on Dutch research by Schwietzer (1984) which concluded that an orderly atmosphere aimed at the stimulation of learning was related to students' academic achievement. The most effective way of encouraging order and purpose amongst pupils is through reinforcement of good practice of learning and behaviour (see also factor 7 Positive reinforcement).

b] An attractive working environment

School effectiveness research suggests that the physical environment of a school can also have an effect on both the attitudes and achievement of pupils. Rutter *et al* (1979) found that keeping a school in a good state of repair and maintenance resulted in higher standards of academic attainment and behaviour, and other studies have shown similar effects (Pablant & Baxter, 1975; Chan, 1979). Rutter (1983) suggested two explanations for this: attractive and stimulating working conditions tend to improve morale; and neglected buildings tend to encourage vandalism. At the primary level, Mortimore *et al* (1988a) have also pointed to the importance of creating a pleasant physical environment, including the display of children's work.

4 Concentration on teaching and learning

The primary purposes of schools concern teaching and learning. These would appear to be obvious activities in an effective school but research suggests that schools differ greatly in the extent to which they concentrate on their primary purpose. Cohen (1983) noted that school effectiveness is clearly dependent upon effective classroom teaching. Similar conclusions about the importance of teaching and learning at the classroom level are evident in reviews by Scheerens (1992), Mortimore (1993) and Creemers (1994). A number of studies have shown correlations between focus on teaching and learning and school and teacher effectiveness. In some cases this focus has been defined by quantifying teachers' and pupils' use of time, and in others it has been defined in terms of other measures of the school's concentration on the actual process of learning and on achievement. It is clearly vital for schools and teachers to focus on the quality as well as the quantity of teaching and learning which takes place.

a] Maximisation of learning time

Some studies have examined the use of time in schools, and a number of measures of learning time have been shown to have positive correlations with pupil outcomes and behaviour. The measures include:

proportion of the day devoted to academic subjects (Coleman *et al,* 1981), or to particular academic subjects (Bennett, 1978);

proportion of time in lessons devoted to learning (Brookover *et al,* 1979; Brookover & Lezotte, 1979; Rutter *et al,* 1979; Sizemore, 1987), or to interaction with pupils (Mortimore *et al,* 1988a, Alexander, 1992);

proportion of teachers' time spent discussing the content of work with pupils as opposed to routine matters and the maintenance of work activity (Galton & Simon, 1980; Mortimore *et al,* 1988a; Alexander, 1992);

teachers' concern with cognitive objectives rather than personal relationships and affective objectives (Evertson *et al,* 1980);

punctuality of lessons (Rutter, 1979; deJong, 1988);

freedom from disruption coming from outside the classroom (California, 1980; Hersch *et al,* 1981).

Collectively, they point to the need for teachers to manage the transition of activities actively and efficiently. Each of these factors has been seen to have a positive relationship with school effectiveness. Researchers who have combined these variables into a single measure of instruction or academic learning time (Rosenshine & Berliner, 1978; Good, 1984; Carroll, 1989) or those who have reviewed this literature as a whole (United States Department of Education, 1987; NREL, 1990; Levine & Lezotte, 1990) have also demonstrated a clear impact of the maximisation of learning time on effectiveness. Of course, measures of time provide only a crude indication of focus on learning. As Carroll (1989) cautioned "*time as such is not what counts, but what happens during that time*" (p 27), nonetheless academic learning time and time on task remain powerful predictors of achievement.

In a recent review of British literature on teaching and learning processes, Sammons *et al* (1994d) drew attention to findings concerning single subject teaching and the management of teaching and learning time "*teachers can have great difficulties in successfully managing children's learning in sessions where work on several different curriculum areas is ongoing. In particular, lower levels of work-related teacher-pupil communication and more routine administrative interactions and lower levels of pupil engagement in work activity have been reported in primary school research studies*" (p52).

b] Academic emphasis

A number of studies, including some mentioned above, have shown effective schools to be characterised by other aspects of academic emphasis: as judged by teachers and pupils (McDill & Rigsby, 1973); through high levels of pupil industry in the classroom (Weber, 1971; Mortimore *et al,* 1988a); and through regular setting and marking of homework (Ainsworth & Batten, 1974), with checks by senior staff that this had occurred (Rutter *et al,* 1979). Reviews (Walberg, 1985; United States Department of Education, 1987) have pointed to the importance of both quantity and quality [appropriateness] of homework set as well as the need for good teacher feedback.

Numerous studies of primary schools have also found that unusually effective schools tend to emphasise "*mastery of academic content*" as an important aspect of their teaching programmes (Levine & Lezotte, 1990). In Northern Ireland, Caul's (1994) work has drawn attention to the importance of universal entry to GCSE, and an emphasis on academic standards in effective schools. Work by Smith and Tomlinson (1989) has also pointed to examination entry policies as a key feature in secondary school effectiveness. Sammons *et al* (1994c) reported that academic emphasis (including regular setting and monitoring of homework) and high GCSE entry rates appear to be features of more highly academically effective secondary schools.

An important factor influencing academic emphasis concerns teachers' subject knowledge. For example, Bennett *et al* (1994) have clearly demonstrated that, at the primary level teachers' knowledge of subject content is often limited particularly in areas such as science. Adequate knowledge was seen as a necessary prerequisite (although not in itself a sufficient condition) for effective teaching and learning. In case studies contrasting highly effective and highly ineffective secondary schools, Sammons *et al* (1994c) report that the ineffective schools had experienced

high staff turnover and severe staff shortages in specialist subjects which were seen to have acted as barriers to effectiveness.

Curriculum coverage is also important. For example, Bennett (1992) has demonstrated wide variations in curriculum coverage both for pupils within the same class and in different schools. Likewise, Tizard *et al*'s (1988) work on infant schools pointed to a wide range between schools and classes in what children of the same age were taught which could not be accounted for by intake differences. These researchers emphasised the importance of curriculum coverage: "*it is clear that attainment and progress depend crucially on whether children are given particular learning experiences*" (p172).

c] *Focus on achievement*

Some researchers have examined the extent to which a school concentrates on the achievement of pupils as a measure of academic emphasis. For example, some case studies of American primary schools and reviews have shown emphasis on the acquisition of basic skills or "*achievement orientation*" to have a positive influence on school effectiveness (Brookover & Lezotte, 1979; Brookover *et al,* 1979; Venezky & Winfield, 1979; Glenn, 1981; Edmonds, 1979, 1981; Schweitzer, 1984). The problem with highlighting this type of factor is that outcome measures tend to be at least partly based on tests in these skills for primary schools, or examination achievement for secondary schools, making factors associated with focus on achievement self-fulfilling prophesies. This is particularly true in relation to class-level data, but less of a problem when examining the effect of a *shared* acceptance of a commitment to a focus on achievement throughout a school.

So while a focus on teaching and learning is at the heart of an effective school, researchers have approached it from a number of different angles. One interesting attempt to consolidate this work is that of Scheerens (1992) who, drawing on a vast range of international school effectiveness literature, judged effective learning time to be one of only three factors for which there is "*multiple empirical research confirmation*". He considered four aspects to be relevant: institutionalised time spent on learning (length of school day/week/year), amount of homework, effective learning time within institutional constraints, and learning time for different subjects. Whilst this typology may not entirely capture the essence of "*focus on teaching and learning*", it provides a useful framework for pinning down measurable factors that indicate important practical manifestations of this focus.

5 Purposeful teaching

It is clear from the research literature that the quality of teaching is at the heart of effective schooling. Of course, this is partly determined by the quality of the teachers in the school, and as we have seen, recruiting and replacing teachers is an important role in effective leadership. However, high quality teachers do not always perform to their full potential, and teaching styles and strategies are important factors related to pupil progress. Whereas learning is a covert process and "*not amenable to direct observation*", teaching is an overt activity and hence is easier to describe and evaluate (Mortimore, 1993), although Levine & Lezotte (1990) have pointed to a number of problems in drawing general conclusions on effective teaching practices. Examining the findings on teaching practices in effective schools research, the outstanding factor that emerges is what we call purposeful teaching. This has a number of elements: efficient organisation, clarity of purpose, structured lessons and adaptive practice.

a] Efficient organisation

Several studies have shown the importance of teachers being well-organised and absolutely clear about their objectives. For example, Evertson *et al* (1980) found positive effects on achievement when teachers felt "*efficacy and an internal locus of control*", and where they organised their classrooms and planned proactively on a daily basis.

Rutter *et al* (1979) drew attention to the beneficial effects of preparing the lesson in advance, and Rutter (1983) later pointed out that the more time that teachers spend organising a lesson after it has begun, the more likely it is that they will lose the attention of the class, with the attendant double risk of loss of opportunity to learn and disruptive behaviour. Various studies and reviews have also stressed the importance of appropriate pacing of lessons to make sure that their original objectives are achieved (Powell, 1980; Brophy & Good, 1986; Levine & Lezotte, 1990).

b] Clarity of purpose

Syntheses of effective schools research highlight the importance of pupils always being aware of the purpose of the content of lessons (Brophy & Good, 1986; United States Department of Education, 1987; NREL, 1990). In summary, the research shows that effective learning occurs where teachers clearly explain the objectives of the lesson at the outset, and refer to these throughout the lesson to maintain focus. These objectives should be related to previous study and to things of personal relevance of the pupils. The information of the lesson should be structured such that it begins with an overview and transitions are signalled. The main ideas of the lesson should be reviewed at the end.

c] Structured lessons

A review by Rosenshine & Stevens (1981) highlighted the importance of structured teaching and purposefulness in promoting pupil progress. The NREL review (1990) drew particular attention to effective questioning techniques where questions are structured so as to focus pupils' attention on the key elements of the lessons. Stallings (1975) pointed to improvements in pupil outcomes through systematic teaching methods with open-ended questions, pupil answers, followed by teacher feedback. Supporting earlier findings by Galton & Simon (1980), Mortimore *et al* (1988a) likewise noted positive effects on progress through teachers spending more time asking questions and on work-related communication in their study of junior education. They also found positive outcomes to be associated with efficient organisation of classroom work with plenty for pupils to do, a limited focus to sessions, and a well-defined framework within which a degree of pupil independence and responsibility for managing their own work could be encouraged. Clearly, for older age groups greater stress on independence and responsibility is appropriate.

A summary of research on effective teachers by Joyce & Showers (1988) concludes that the more effective teachers:

- Teach the classroom as a whole
- Present information or skills clearly and animatedly
- Keep the teaching sessions task-oriented
- Are non-evaluative and keep instruction relaxed
- Have high expectations for achievement (give more homework, pace lessons faster, create alertness)
- Relate comfortably to the students, with the consequence that they have fewer behaviour problems.

Scheerens (1992) in his analysis of the international body of effective schools research highlights "*structured teaching*" as one of three factors which have been convincingly demonstrated to promote effectiveness. His definition of structured teaching is slightly different from other researchers but it is worth looking at some of the examples of what he means by it:

- making clear what has to be learnt;
- splitting teaching material into manageable units for the pupils and offering these in a well-considered sequence;
- much exercise material in which pupils make use of 'hunches' and prompts;
- regularly testing for progress with immediate feedback of the results.

Scheerens admits that this exemplification of structured teaching is more applicable to primary schools, in particular in subjects that involve "*reproducible knowledge*". However, he suggests that a modified and less prescriptive form of structured teaching can have a positive effect for the learning of higher cognitive processes and in secondary schools, and he cites a number of studies to confirm this (Brophy & Good, 1986; Doyle, 1985). Gray (1993) is not convinced that this factor is appropriate beyond the earlier years of schooling, and he suggests that we need to be cautious, given that so much of the early school effectiveness research is focused on disadvantaged schools thus giving particular weight to the teaching of basic skills.

d] Adaptive practice

Although school effectiveness research shows a number of factors to be consistently correlated with better outcomes, it also shows that application of mandated curriculum materials and teaching procedures does not often bring out gains in achievement. Pupil progress is enhanced when teachers are sensitive to differences in the learning styles of pupils and, where feasible, identify and use appropriate strategies (NREL, 1990). In many cases this requires flexibility on the part of the teachers in modifying and adapting their teaching styles (Armor *et al,* 1976; Sizemore *et al,* 1983).

6 High expectations

Positive expectations of pupil achievement, particularly amongst teachers but also pupils and parents, is one of the most important characteristics of effective schools (United States Department of Education, 1987). However, care is needed in interpreting the relationship between expectations and achievement, since the causal process can run in the reverse direction, with high achievement enhancing optimism amongst teachers. However, the weight of the evidence suggests that if teachers set high standards for their pupils, let them know that they are expected to meet them, and provide intellectually challenging lessons to correspond to these expectations, then the impact on achievement can be considerable. In particular, low expectations of certain kinds of student have been identified as an important factor in the under-achievement of students in disadvantaged urban schools (OFSTED, 1993).

a] High expectations all round

A large number of studies and review articles in several countries have shown a strong relationship between high expectations and effective learning (Trisman *et al,* 1976; Brookover *et al,* 1979; Edmonds, 1979, 1981; Rutter *et al,* 1979; California, 1980; Schweitzer, 1984; Stringfield *et al,* 1986; United States Department of Education, 1987; Tizard *et al,* 1988; Mortimore *et al,* 1988a; Scheerens, 1992; Stoll & Fink, 1992; Caul, 1994; Sammons *et al,* 1994c). High expectations have also been described as a "*crucial characteristic of virtually all unusually effective schools described in case studies*" (Levine & Lezotte, 1990). The important

point as far as teachers are concerned is that low expectations go hand in hand with a sense of lack of control over pupils' difficulties and a passive approach to teaching. High expectations correspond to a more active role for teachers in helping pupils to learn (Mortimore, 1994) and a strong sense of efficacy (Armor *et al,* 1976).

As with most of the factors identified in this report, high expectations alone can do little to raise effectiveness. They are most likely to be operationalised in a context where there is a strong emphasis on academic achievement, where pupils' progress is frequently monitored, and where there is an orderly environment, conducive to learning. In addition, high expectations are more effective when they are part of a general culture which places demands on everyone in the school, so that, for example, the headteacher has high expectations for the performance and commitment of all of the teachers (Murphy, 1989).

b] Communicating expectations

Expectations do not act directly on pupil performance, but through the attitude of the teacher being communicated to pupils and the consequent effect on their self-esteem (Bandura, 1992). The expectations may be influenced by factors other than the perceived ability or actual attainments of children. For example, Mortimore *et al* (1988a) found that teachers had lower expectations for younger pupils in the class and for those from lower social classes, even when account was taken of children's attainment in areas such as reading and mathematics. But even if teachers do not believe success is possible, conveying conviction that achievement can be raised can have a powerful effect. Teachers may need to monitor either or both their beliefs and behaviour to make sure that this takes place (NREL, 1990). It should also be noted that raising expectations is an incremental process and demonstrated success plays a critical role (Wilson & Corcoran, 1988). Reinforcing this success through praise (see positive reinforcement) is a key opportunity for communicating high expectations.

c] Providing intellectual challenge

There seems little doubt that a common cause of under-achievement in pupils is a failure to challenge them. The implications of this are that when schools have high expectations of their pupils they attempt, wherever possible, to provide intellectually challenging lessons for all pupils in all classes. This approach has been shown by several studies to be associated with greater effectiveness.

A British piece of research had some important findings which go some way to explaining the processes through which expectations have an effect. Tizard *et al* (1988) in a study of infant schools in inner London found that teachers' expectations of both individual pupils and of classes as a whole had a strong influence on the content of lessons, which to a large extent explained differences in curriculum between classes with similar intakes. These expectations were not just influenced by academic considerations but also by the extent to which a child or a class was "*a pleasure to teach*". The result was that different levels of expectations of pupils were translated into differing requirements for their work and their performance.

Mortimore *et al* (1988a) in their study of the junior years of primary schools found that in classes where the pupils were stimulated and challenged, progress was greatest. They particularly mentioned the importance of teachers using more higher-order questions and statements and encouraging pupils "*to use their creative imagination and powers of problem-solving*". Levine and Stark (1981) also stressed the importance of the development of higher-order cognitive skills in effective primary schools, mentioning in particular reading comprehension and problem solving in mathematics. Levine and Lezotte (1990) and NREL (1990) pointed to a number of other studies with similar findings.

7 Positive reinforcement

Reinforcement, whether in terms of patterns of discipline or feedback to pupils, is an important element of effective schooling (Brookover *et al,* 1979; Rutter *et al,* 1979). Walberg (1984) in a major review of studies of teaching methods found that reinforcement was the most powerful factor of all. As will be seen, school effectiveness research has tended to show that not all forms of reinforcement have a positive impact. Rewards, other positive incentives and clear rules are more likely than punishment to be associated with better outcomes.

a] Clear and fair discipline

Good discipline is an important condition for an orderly climate (see ethos), but is best derived from "*belonging and participating*" rather than "*rules and external control*" (Wayson *et al,* 1988). For example, too frequent use of punishment can create a tense and negative atmosphere with counterproductive effects on attendance and behaviour (Rutter, 1983). Indeed, a number of studies have found that formal punishments are either ineffective or have adverse effects (Reynolds & Murgatroyd, 1977; Clegg & Megson, 1968; Rutter *et al,* 1979; Heal, 1978; Mortimore *et al,* 1988). These and other studies show that effective discipline involves keeping good order, consistently enforcing fair, clear and well-understood rules and infrequent use of actual punishment (NIE, 1978; Rutter *et al,* 1979; Coleman *et al,* 1981).

b] Feedback

Feedback to pupils can be immediate (in the form of praise or reprimand) or to some extent delayed (in the form of rewards, incentives and prizes). Two large reviews of effective schools research showed that school-wide or public recognition of academic success and of other aspects of positive behaviour contribute to effectiveness (NREL, 1990; Purkey & Smith, 1994). The British study of secondary schools by Rutter *et al* (1979) showed that direct and positive feedback such as praise and appreciation had a positive association with pupil behaviour, but that prizes for work had little effect on any outcome measure. The researchers posited three explanations for the greater effect of praise: it affects a greater number of pupils; the lack of delay allows more definite links to incentives; and is more likely to increase the *intrinsic* rewards of that which is being reinforced.

Mortimore *et al* (1988) had similar findings for primary schools showing that praise and indeed neutral feedback were more effective than "*a reliance on control through criticism*". It should be noted that the NREL synthesis of the literature (1990) pointed out that the research shows that praise and other reinforcements should be provided for correct answers and progress in relation to past performance, but that use should be sparing and must not be unmerited or random. A number of studies have also shown that rewards and praise need not necessarily be related solely to academic outcomes, but can apply to other aspects of school life such as attendance and citizenship (Rutter *et al,* 1979; Hallinger & Murphy, 1986; Levine & Lezotte, 1990). Brophy & Good's (1986) review of teacher behaviour and student achievement provides a set of guidelines for effective praise. Amongst other aspects these stress the need for praise to be specific, contingent, spontaneous and varied and to use students' own prior accomplishments as a context for describing present accomplishments and to attribute success to effort and ability.

8 Monitoring progress

Well-established mechanisms for monitoring the performance and progress of pupils, classes, the school as a whole, and improvement programmes, are important features of many effective schools. These procedures may be formal or informal, but either way they contribute to a focus

on teaching and learning and often play a part in raising expectations and in positive reinforcement. There appear to be particular benefits from active headteacher engagement in the monitoring of pupil achievement and progress.

a] Monitoring pupil performance

Frequent and systematic monitoring of the progress of pupils and classes by itself has little impact on achievement, but has been shown to be an important ingredient of the work of an effective school (see Weber, 1971; Venezky & Winfield, 1979; Edmonds, 1979, 1981; Sizemore, 1985). First, it is a mechanism for determining the extent to which the goals of the school are being realised. Second, it focuses the attention of staff, pupils and parents on these goals. Third, it informs planning, teaching methods and assessment. Fourth, it gives a clear message to pupils that teachers are interested in their progress. This last point relates to teachers giving feedback to pupils, which we discuss under "*positive reinforcement*".

Levine & Lezotte (1990) recognised monitoring of student progress as a factor often cited in effective schools research but argued that there has been little agreement about defining the term or providing guidance for practice. They also pointed to a number of studies that have shown that some schools waste time or misdirect teaching through too frequent monitoring procedures. In their list of effective school correlates they used the phrase "*appropriate monitoring*" in view of the need for more work on the form and frequency of its use.

A large British study of primary schools (Mortimore *et al,* 1988) concentrated on a well-established form of monitoring pupil performance. These researchers examined record-keeping by teachers as a form of continual monitoring of the strengths and weaknesses of pupils, combining the results of objective assessments with teachers' judgement of their pupils. In many effective schools these records relate not only to academic abilities but also to personal and social development. The researchers found record-keeping to be an important characteristic of effective schools.

b] Evaluating school performance

Effective schools research also shows that monitoring pupil performance and progress at the school-level is an important factor. In discussing leadership we already mentioned the importance of the headteacher having active involvement and detailed knowledge of the workings of the school, for example through visiting classrooms. On a more formal basis, Murphy's (1989) review of studies of effective leaders showed that they practice a range of monitoring procedures, feed back their interpretation of these to teachers and integrate these procedures with evaluation and goal-setting.

Scheerens (1992), in a review of school effectiveness research, argued that proper evaluation is "*an essential prerequisite to effectiveness-enhancing measures at all levels*". Evaluating school improvement programmes is particularly important. For example, Lezotte (1989) emphasised the importance of the use of measures of pupil achievement as the basis for programme evaluation, indeed, this was one of his five factors for school effectiveness.

It could be concluded that the feedback and incorporation of monitoring and evaluation information routinely into decision-making procedures in the school ensures that information is used actively. Such information also needs to be related to staff development (see also factor 11 - the learning organisation).

9 Pupil rights and responsibilities

A common finding of effective schools research is that there can be quite substantial gains in effectiveness when the self-esteem of pupils is raised, when they have an active role in the life of the school, and when they are given a share of responsibility for their own learning.

a] Raising pupil self-esteem

Levels of self-esteem are significantly affected by treatment by others and are a major factor determining achievement (Helmreich, 1972; Bandura, 1992). In the case of pupil self-esteem, the attitudes of teachers are expressed in a number of ways: the way that they communicate with pupils; the extent to which pupils are accorded respect, and feel they are understood; and the efforts teachers make to respond to the personal needs of individual pupils. Trisman *et al* (1976) found student-teacher rapport to have a beneficial influence on outcomes, and a number of other studies have shown positive teacher-pupil relations to be a dimension linked with success (Rutter *et al,* 1979; Coleman *et al,* 1982; Lightfoot, 1983; Lipsitz, 1984). Mortimore *et al,* (1988) found positive effects where teachers communicated enthusiasm to pupils, and where they showed interest in children as individuals.

Teacher-pupil relationships can be enhanced out of the classroom. British studies of secondary schools have found that when there were shared out-of-school activities between teachers and pupils (Rutter *et al,* 1979; Smith & Tomlinson, 1990) and where pupils felt able to consult their teachers about personal problems (Rutter *et al,* 1979), there were positive effects on outcomes.

b] Positions of responsibility

British studies have also shown positive effects on both pupil behaviour and examination success through giving a high proportion of children positions of responsibility in the school system, thus conveying trust in pupils' abilities and setting standards of mature behaviour (Ainsworth & Batten, 1974; Reynolds *et al,* 1976; Reynolds & Murgatroyd, 1977; Rutter *et al,* 1979).

c] Control of work

Some studies have shown that when pupils respond well when they are given greater control over what happens to them at school, enhancing a number outcomes, even at the primary level (NIE, 1978; Brookover *et al,* 1979). A British study of primary schools showed that there are positive effects when pupils are encouraged to manage their work independently of the teacher over short periods of time, such as a lesson or an afternoon (Mortimore *et al,* 1988).

10 Home-school partnership

Effective schools research generally shows that supportive relations and co-operation between home and schools have positive effects. Coleman *et al* (1993) has drawn particular attention to the benefits of schools fostering parents' involvement in their children's learning. The question of whether higher levels of parental involvement have an impact is a difficult one, since it can mean a multitude of things in different contexts and there are likely to be marked differences between primary and secondary schools in the nature of parental involvement. As yet, there has been no research into the relationship between the level of accountability of schools to parents in the UK (increased under the provisions of the Education Reform Act 1988) and their effectiveness.

a] Parental involvement

The particular ways in which schools encourage good home-school relations and foster parents' involvement with their children's learning will be affected by pupil's age and marked differences are likely to be identified between primary and secondary schools.

Mortimore *et al*'s (1988a) junior school study found positive benefits where parents helped in the classroom and with school trips, where there were regular progress meetings, where there was a parents' room and where the headteacher had an 'open door' policy. Interestingly, they found a negative effect for Parent-Teacher Associations, and suggested that this more formalised type of parental involvement was not sufficient in itself to engender involvement and in some cases, could present barriers to those not within the 'clique'. Tizard *et al* (1982) showed that parental involvement in reading had more effect than an extra teacher in the classroom. Epstein (1987), Weinberger *et al* (1990) and Topping (1992) have also drawn attention to the value of parental involvement in reading projects in primary schools.

Armor *et al* (1976) showed that parental presence in the school buildings, and participation in committees, events and other activities all had positive effects on achievement. On the other hand, Brookover & Lezotte (1979) found no support for a relationship between parental involvement and effectiveness.

More recent work on school improvement by Coleman *et al*, 1993; Coleman *et al*, 1994 and Coleman, 1994 has drawn attention to the importance of positive and supportive teacher, student and parent attitudes for the development of pupil responsibility for learning.

Parental involvement is often highly correlated with socio-economic factors, and concern that highlighting it as an important factor might unfairly pass responsibility for effectiveness to parents partly explains why some researchers have avoided defining or measuring it. However, the studies above did control for socio-economic intake. Interestingly, at least one study has shown that parental involvement can be *more effective* in schools enroling more poor or working-class pupils (Hallinger & Murphy, 1986).

Interim results by Sammons *et al* (1994c) indicate that there was a tendency for staff in less effective secondary schools to attribute lack of parental interest as a major factor contributing to under-achievement, whereas in more effective secondary schools serving similar intakes there were more favourably perceptions of parental interest and more active relations with parents.

The actual mechanisms by which parental involvement influences school effectiveness are not entirely clear. It might be speculated that where parents and teachers have similar objectives and expectations for children, the combined support for the learning process can be a powerful force for improvement (Jowett *et al*, 1991; Mortimore, 1993; Coleman, 1994). Parents who are involved may expand pupils' active learning time (eg by working with children themselves especially for younger children, or by supervising homework) and, in the case of difficulties arising at school, perhaps in attendance or behaviour, being more likely to support the school's requirements and standards. As MacBeath (1994) has argued successful schools are likely to be those "*which not only 'involve' but support and make demands on parents*" (p5). He further argues for a more active role for parents in school self-evaluation and development planning. Coleman *et al* (1994) draw particular attention to the interconnectedness of the affective and cognitive domains in the triad of relationships between teacher, parent and student. They argue "*it is the relationship between the individual teacher and the parent(s) that is critical in enlisting the home as ally, or rendering it the enemy of the educative (or not) activities of the classroom*" (p30).

11 A learning organisation

Effective schools are learning organisations, with teachers and senior managers continuing to be learners, keeping up to date with their subjects and with advances in understanding about effective practice. We use the term "*learning organisation*" in a second sense which is that this learning has most effect when it takes place at the school itself or is school-wide, rather than specific to individual teachers. The need for schools to become 'learning organisations' is increasingly important given the pace of societal and educational change (Hopkins, Ainscow & West, 1994). Southworth (1994) provides a helpful review of the features of a learning school which stresses the need for learning at five interrelated levels - children's, teacher, staff, organisational and leadership learning.

a] School-based staff development

Almost every single research study which has looked at the impact of staff development on school effectiveness has pointed to the need for it to be school-based. For example, Mortimore *et al* (1988a) found that in-service training courses only had a positive effect on outcomes when they were attended for a good reason. Stedman (1987) stressed the importance of training being tailored to the specific needs of staff and being "*an integral part of a collaborative educational environment*". Coleman & LaRocque's (1990) research in Canada also points to the positive impact which support from administrative bodies at a local level (School Boards equivalent to LEAs) can provide.

Levine & Lezotte (1990) and Fullan (1991) cite a number of studies that show that one-off presentations by outside experts can be counterproductive. Their review of unusually effective schools had similar conclusions to other reviews and studies. Staff development in effective schools is generally at the school site, is focused on providing assistance to improve classroom teaching and the instructional programme, and is ongoing and incremental (Armor *et al*, 1976; Venezky & Winfield, 1979; California, 1980; Glenn, 1981; Purkey & Smith, 1983; Hallinger & Murphy, 1985; NREL, 1990). Studies have also stressed the value of embedding staff development within collegial and collaborative planning, and ensuring that ideas from development activities are routinely shared (Purkey & Smith, 1983; NREL, 1990; Stoll & Fink, 1994).

Conclusions

The majority of effectiveness studies have focused exclusively on students' cognitive outcomes in areas such as reading, mathematics or public examination results. Only a relatively few (mainly British) studies have paid attention to social/affective outcomes (eg Reynolds, 1976; Rutter, 1979; Mortimore *et al* 1988a; Teddlie & Stringfield, 1993). Because of this focus the results of our review, inevitably, tell us more about the correlates of academic effectiveness. As Reynolds (1994) has observed, we have less evidence about school and classroom processes that are important in determining schools' success in promoting social or affective outcomes such as behaviour, attendance, attitudes and self-esteem. Barber (1993) has drawn particular attention to the major problem of low levels of pupil motivation in British secondary schools, and combatting this is likely to be especially important for raising standards in deprived urban areas. Further research on the ways effective schools influence social and affective outcomes including student motivation and commitment to school would be desirable. Having said this, we feel that enhancing academic outcomes and fostering pupils' learning and progress remain crucial tests of effective schooling. For this reason, identifying the correlates of effectiveness, especially academic effectiveness has an important part to play in making informed judgements about schools.

The eleven interrelated and, in many ways, mutually dependent factors identified in this review appear to be generic. In other words, evidence for their importance is derived from both secondary and primary school studies. Initially, an attempt was made to produce separate analyses for the two sectors. However, the degree of overlap identified in findings would, in our view, make the presentation of separate summaries repetitious.

Despite the agreement in findings for both sectors, however, it should be noted that the emphasis or means of expression will often differ. For example, the ways in which a school pays attention to the factors "pupil rights and responsibilities" and "positive reinforcement" will clearly be strongly influenced by pupils' age. Appropriate forms of praise and reward and the manner and extent to which pupils are encouraged to take responsibility for their own learning and to become involved in the school's life will vary for different age groups. Nonetheless, the need for appropriate feedback and positive reinforcement and a concern with pupil rights and responsibilities is important at all stages in education. Ways of focusing on teaching and learning and teaching techniques will also differ for different age groups, but careful and appropriate planning and organisation, clarity of objectives, high quality teaching and maximisation of learning time remain crucial for effective teaching at all stages. Likewise, ways of fostering parental involvement in their children's learning, and with the school will also vary markedly between the primary and secondary sectors.

The centrality of teaching and learning

Scheerens (1992) has rightly drawn attention to the centrality of teaching and learning and of classroom processes in determining schools' academic effectiveness in particular. The eleven factors identified in this review focus on aspects to do with whole school processes (leadership, decision-making, management, goals, expectations and so on) and those to do with, and directly related to, classroom organisation and teaching. Ultimately, the quality of teaching (expressed most clearly by Factors 4 and 5) and expectations (Factor 6) have the most significant role to play in fostering pupils' learning and progress and, therefore, in influencing their educational outcomes. Given this, school processes, including professional leadership, remain highly influential because they provide the overall framework within which teachers and classrooms operate. They are important for the development of consistent goals and ensuring that pupils' educational experiences are linked as they progress through the school. In some schools (those that are more effective) the overall framework is far more supportive for classroom practitioners and pupil learning than in others.

The results of our review do not support the view that any one particular teaching style is more effective than others. Mortimore *et al's* (1988a) analysis of observational and other data about primary school teachers indicated that teacher behaviour was too complex and varied for the application of simple descriptions of teaching style or approach and that "*teachers could not validly be divided into a number of categories on the basis of differences in teaching style*" (p81). Re-analysis of the Bennett (1976) data by Aitkin, Bennett & Hesketh (1981) and Aitkin, Anderson & Hinde (1981) also points to problems in the use of divisions such as "formal" or "informal", "traditional" versus "progressive" and the separation of teachers into groups operating distinctive styles. Joyce & Showers' (1988) analysis of ways staff development can foster student achievement concludes that a number of educational practices "*ranging across ways of managing students and learning environments, teaching strategies or models of teaching ... can affect student learning*" (p56). Recent reviews highlight the importance of effective management, clarity of objectives, good planning, appropriate and efficient organisation of pupils' time and activities, and emphasis on work communication and intellectually challenging teaching (Gipps, 1992; Sammons *et al*, 1994d) and suggest that flexibility, the ability to adapt teaching approaches for different purposes and groups is more important than notions of one single "style"

being better than others. Indeed, in our view debates about the virtues of one particular teaching style over another are too simplistic and have become sterile. Efficient organisation, fitness for purpose, flexibility of approach and intellectual challenge are of greater relevance.

Commonsense

The findings of school effectiveness research have sometimes been criticised for being just a matter of "common sense". Sammons (1994) notes "*There is a grain of truth in this argument. Because school effectiveness research by its very nature sets out to identify the components of good practice ... it is inevitable that some of the findings are unsurprising to practitioners*" (p46). Rutter *et al* (1979) likewise pointed out that "*research into practical issues, such as schooling rarely comes up with findings that are totally unexpected. On the other hand it is helpful in showing which of the abundance of good ideas available are related to successful outcomes*" (p204). In a discussion about appropriate frameworks for judging the quality of schooling Gray (1990) commented "*As a rule, schools which do the kinds of things the research suggests make a difference, tend to get better results (however these are measured or assessed). The problem is that these are tendencies not certainties. In betting terms the research would be right about seven out of ten times, especially if it could be supported by professional assessments*" (p214).

In connection with Gray's comments on the importance of professional assessments, it is interesting to note the links between the findings of this review of school effectiveness research and some of the conclusions reached in studies by inspectors. For example, the influential HMI report "*Ten Good Schools*" (DES, 1977) explicitly drew attention to common features in a sample of secondary schools judged to be "good". This report suggested that "*'success' does not stem merely from the existence of certain structures of organisation, teaching patterns or curriculum planning, but is dependent on the spirit and understanding that pervades the life and work of a school, faithfully reflecting its basic objectives*" (p7). In particular, the creation of a "well-ordered environment", levels of expectation which are at once realistic and demanding, whether in academic performance or in social behaviour and the need for functions and responsibilities to be clearly defined and accepted were highlighted. Other aspects emphasised include the professional skills of the headteacher, the importance of team work, and systems for monitoring progress and pastoral care of students. In connection with the quality of teaching aspects such as variety of approach, regular and constructive correction of work, and consistent encouragement were seen as "*the hallmarks of successful teaching*". School climate, leadership, and links with the local community were also noted.

Comparisons with *Ten Good Schools* are useful because this report pre-dates much of the school effectiveness research we have reviewed and, therefore, is less likely to have been influenced by the dissemination of research findings than more recent inspection documents which often refer to the effectiveness research explicitly. The professional judgements evident in this report draw attention to many of the aspects covered by the eleven key factors which have emerged from our review of school effectiveness research.

Resources

Most studies of school effectiveness have not found the level of resources allocated to schools to be a major determinant of effectiveness. However, this does not imply that resources are unimportant. Mortimore *et al* (1988a) cautioned that the schools in its sample "*were all relatively well resourced (under the arrangements of the former ILEA). Because all schools were well funded, we did not find resourcing to be a key factor. Had our sample been drawn from a range of LEAs with both high and low spending traditions, it is unlikely this would have been the case*"

(p264). The importance of a good physical environment of staffing stability and absence of staff shortages were also noted.

Influential US research by Hanushek (1986, 1989) involving meta analyses of many studies concluded that there was little relationship between levels of resources and the accomplishments of students in schools, but many of the studies included suffered from significant limitations. A recent re-analysis of Hanushek's synthesis of the literature (using the same set of studies with their limitations) has questioned this view. Hedges, Laine & Greenwald's (1994) re-analysis indicates that the impact of resource allocations (especially per pupil expenditure) has been under-estimated. These authors reject Hanushek's conclusion that resources are unrelated to outcomes, noting that "*the question of whether more resources are needed to produce real improvements in our nation's schools can no longer be ignored*" (p13). Whilst a new appreciation of evidence concerning the positive impact of resources is timely, our review suggests that the aspects of school and classroom processes summarised under the headings of the 11 key factors exert more powerful and direct influences. Our review confirms Gray's (1990) observation that "*adequate levels of resourcing, then, seem to be necessary but not a sufficient condition for a school to be effective. .... in twenty years of reading research on the characteristics of effective schools I have only once come across a record of an 'excellent' school where the physical environment left something to be desired*" (p213).

Educational markets and other changes

It is important to recognise that the evidence accumulated concerning the correlates of effectiveness during the last twenty years does not allow any firm conclusions to be drawn about the impact of recent legislative changes in the UK which were intended to improve quality and raise standards by extending diversity and choice and stimulate the development of educational markets (DFE, 1992). For example, the increased powers and role of governors in school management and the changing role of the headteacher under LMS have not, as yet, featured in school effectiveness studies. Similarly, whilst parental involvement has been found to be important, it is not possible as yet to establish the impact of increased choice and availability of greater information (eg the publication of league tables) intended to increase accountability on school performance. Further research addressing such changes is require before their impact on schools can be evaluated (Sammons & Hillman, 1994). Other changes in the UK context which are also likely to prove important in future school effectiveness research include the impact of development planning (MacGilchrist, 1995) and the impact of the National Curriculum and national assessment. Many other education systems in different parts of the world have or are in the process of introducing similar kinds of changes to those evident in the UK and studies which explicitly examine the consequences of such changes in context for school effectiveness are urgently needed.

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